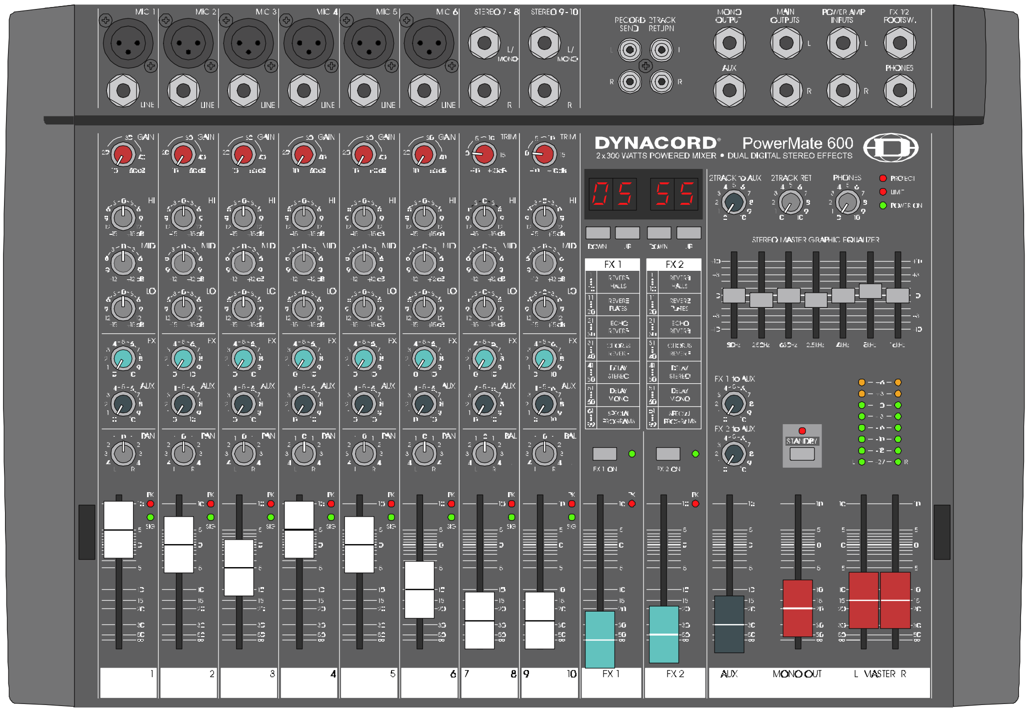
DYNACORD®

SERVICE MANUAL

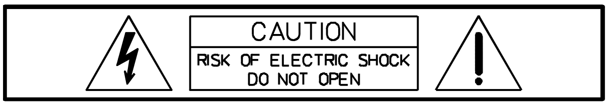
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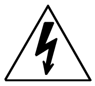
PowerMate 600

POWERED MIXER

IMPORTANT SAFETY INSTRUCTIONS



WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.
AVIS: RISQUÉ DE CHOC ELECTRIQUE. NE PAS OUVRIR.



The lightning flash with arrowhead symbol, within an equilateral triangle is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintance (servicing) instructions in the literature accompanying the appliance.

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a damp cloth.
7. Do not block any of the ventilation openings.
   Install in accordance with the manufactures instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus that produce heat.
9. Only use attachments/accessories specified by the manufacturer.
10. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

For US and CANADA only:

Do not defeat the safety purpose of the grounding-type plug. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. When the provided plug does not fit into your outlet, consult an electrican for replacement of the absolete outlet.

IMPORTANT SERVICE INSTRUCTIONS

CAUTION: These servicing instructions are for use by qualified personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the Operating Instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

1. Security regulations as stated in the EN 60065 (VDE 0860 / IEC 65) and the CSA E65 - 94 have to be obeyed when servicing the appliance.
2. Use of a mains separator transformer is mandatory during maintenance while the appliance is opened, needs to be operated and is connected to the mains
3. Switch off the power before retrofitting any extensions, changing the mains voltage or the output voltage.
4. The minimum distance between parts carrying mains voltage and any accessible metal piece (metal enclosure), respectively between the mains poles has to be **3 mm** and needs to be minded at all times.
   The minimum distance between parts carrying mains voltage and any switches or breakers that are not connected to the mains (secondary parts) has to be **6 mm** and needs to be minded at all times.
5. Replacing special components that are marked in the circuit diagram using the security symbol (Note) is only permissible when using original parts.
6. Altering the circuitry without prior consent or advice is not legitimate.
7. Any work security regulations that are applicable at the location where the appliance is being serviced have to be strictly obeyed. This applies also to any regulations about the work place itself.
8. All instructions concerning the handling of **MOS** - circuits have to be observed.

Note:  **SAFETY COMPONENT (HAS TO BE REPLACED WITH ORIGINAL PART ONLY)**

GARANTIE

Das Werk leistet Garantie für alle nachweisbaren Material- und Fertigungsfehler für die Dauer von 36 Monaten ab Verkauf.
Garantieleistungen werden nur dann anerkannt, wenn gültige, d.h. vollständig ausgefüllte Garantieunterlagen vorliegen.
Von der Garantie ausgenommen sind alle Schäden, die durch falsche oder unsachgemäße Bedienung verursacht werden. Bei Fremdeingriffen oder eigenmächtigen Änderungen erlischt jeder Garantieanspruch.

WARRANTY

The manufacturer's warranty covers all substantial defects in materials and workmanship for a period of 36 months from the date of purchase.
Liability claims are accepted solely, when a valid – correctly and completely filled out – Warranty Registration form is presented by the original owner of the product. The warranty does not cover damage that results from improper or inadequate treatment or maintenance. In case of alteration or unauthorized repairs, the warranty is automatically terminated.

GARANTIE

La garantie constructeur couvre tous les défauts matériels et de main d'œuvre pour une période de 36 mois à compter de la date d'achat. La garantie ne sera reconnue que si la Carte de Garantie, correctement et complètement remplie, est présentée par l'acheteur d'origine du produit. Les dommages dus à un mauvais maniement de l'appareil, à un traitement ou une maintenance incorrects ou inadéquats ne sont pas garantis. Toute modification ou intervention effectuée par une personne non qualifiée entraîne la résiliation automatique de la garantie.

Table of Contents

TELEX / EVI Audio GmbH
- Service Department -
Hirschberger Ring 45
94315 Straubing

Tel.: ++49-9421/706-342
Fax.: ++49-9421/706-350
e-mail: josef.stadler@telex.de

Specifications : PowerMate 600 - complete device

measuring standard : IEC 268, IHF-A
Level : 0 dBu = 775 mV (RMS) measured frequency : 1kHz

Measuring Conditions

1. Nominal Power Output Capacity:
Gain control set to UNITY GAIN = 0 dB (20 dB MIC), all faders down,
Master fader set to + 6 dB and all rotary controls at their center position.

2. Equivalent Input Noise

Input	source impedance	gain control
LINE	50 ohms	Unity Gain (20dB)
MIC	150 ohms	Gain max.

3. Distortion is generally measured via THD+Noise. The bandwidth (MBW) is 80 kHz.
Mixing Console under nominal condition.

OUT	U(E) at the correspondent input	U(A) at the measured output	frequencies
LINE	+10 dBu	+ 16 dBu	1 kHz, 10 kHz
MIC	- 10 dBu	+ 16 dBu	1 kHz, 10 kHz
Power Amplifier	+ 6 dBu	150 W / 8 ohms	20 Hz .... 20 kHz

4. Frequency response at 20 dB below full modulation.
5. Crosstalk and damping at nominal setting U(A) = 16 dBu with variable band-pass filter.
6. Common mode rejection CMRR (selective with band-pass variable)

Input	U(E)	output	gain control
LINE	+ 16 dBu	Main Out	Unity Gain (20dB)
MIC	- 50 dBu	Main Out	Gain max.

POWER SUPPLY

1. Supply voltage: AC
2. Nominal supply voltage PM 600: 112727: **230 V**; 112...: **240V**; 112... : **100 V;** 112750 : **120 V.**
3. Nominal frequency of the power supply: 50 - 60 Hz
4. Deviation range of the power supply: - 30 % ..... + 10 %
5. Power consumption (both channels driven with a 1 kHz sine signal)

Power consumption with RL = 4 ohms	**PM 600**	**power consumption**
Idling power consumption	40 ... 60 W	
Nominal power consumption	1000 W	230V / 5,0A
Standard power consumption	350 W	230V / 2,0A
Maximum power consumption (THD=1%)	1000 W	230V / 5,0A
Power consumption at 1/8 of the maximum output power (2 x 38 W)	400 W	230V / 2,2A
Power consumption at 1/3 of the maximum output power (2 x 100 W)	590 W	230V / 3,3A

INPUT CHARACTERISTICS
Mixer under nominal condition with nominal output level at the mixer outputs. Input sensitivity, gain, channel faders and master fader set to their max. position.

Input	Nominal input level (dBu)	Input sensitivity	Max. input level (dBu)	Input impedance	Balancing
MIC	- 60 ... - 10	-74dBu(155µV)	+ 11	1.8 k ohms	balanced
MONO LINE	- 40 ... + 10	-54dBu(1,55mV)	+ 30	18 k ohms	balanced
STEREO LINE	- 20 ... + 10	-34dBu(15.5mV)	+ 30	18 k ohms	balanced
POWER AMP	+ 6	+6dBu(1.55V)	+ 20	18 k ohms	balanced
2TRACK RET.	+ 4	-9dBu(275mV)	+ 14	> 8 k ohms	unbalanced

OUTPUT CHARACTERISTICS Mixer

Output	Nominal output level (dBu)	Max. Output level (dBu)	Output impedance	Balancing
MAIN OUT	+ 6	+ 20	75 ohms	GND-Sense
MONO OUT	+ 6	+ 20	75 ohms	GND-Sense
AUX SEND	0	+ 20	75 ohms	GND-Sense
REC. SEND	- 7.8 (- 10 dBV)	+ 16	1 k ohm	unbalanced
PHONES	- 2 / 200 ohms	+ 18 / 200 ohms	47 ohms	unbalanced

OUTPUT CHARACTERISTICS Power Amplifier

Nominal input voltage at the Power Amp In	Nominal load impe-dance	Nominal output power, Single Channel THD < 0.1%	Maximum output power, Single Channel, THD=1%	Max. Single Channel Output Power)1	Nominal output voltage	Max. Idling output voltage	Maximum Output voltage THD=1%
+ 6 dBu	8	150 W	200 W	210 W	34.7 V	43 V	40.0 V
+ 6 dBu	4	300 W	340 W	390 W	34.7 V	43 V	36.9 V

)1 measured with a **Dynamic Headroom-Test Signal** according to IHF-A: 1 kHz Burst, 20ms On, 480 ms Off

STABILIZING of the power amplifier
Single Channel, standard output voltage

	8 ohms	4 ohms
Stabilizing	0.6 %	1.2 %
Stabilizing level	0.05 dB	0.1 dB

FREQUENCY RESPONSES
Amplification frequency response (-3 dB drop compared to the level at the standard frequency of 1kHz) **:**

	f (u) b - 3 dB	f (o) - 3 dB
Any mixer input to any mixer output, better than	15 Hz	60 kHz
Any mixer input to SPEAKER OUT L & R, better than	30 Hz	40 kHz

Distortion-limited transmission rage (power bandwidth) power amplifier:

Input	f (u)	f (o)	Remarks
Power Amp Input	15 Hz	60 kHz	THD=0.4%, 1/2 nominal power at 4 ohms, MBW = 500 kHz

AMPLITUDE NON-LINEARITIES (Single Channel)

Power amplifier Input = Power Amp In	Power amplifier R(L) = 8 ohms	Power amplifier R(L) = 4 ohms	Remarks
Nominal THD	< 0.03 % / < 0.1 %	< 0.1 % / < 0.2 %	MBW=80 kHz, f=1kHz / 10 kHz
Standard THD	< 0.03 % / < 0.03 %	< 0.1% / < 0.1 %	MBW=80 kHz, f=1kHz / 10 kHz
IMD-SMPTE	< 0.05 %	< 0.5 %	60 Hz, 7 kHz

DIM 30	< 0.03 %	< 0.05 %	3.15 kHz, 15 kHz
DIM 100	< 0.03 %	< 0.05 %	3.15 kHz, 15 kHz

Mixer section	**Distortion f = 1 kHz**	**Distortion f = 10 kHz**	**Remarks**
LINE Input -> MAIN OUT	< 0.006 %	< 0.02 %	
LINE Input -> MONO OUT	< 0.006 %	< 0.02 %	
LINE Input -> AUX SEND	< 0.006 %	< 0.02 %	
MIC Input - MAIN OUT	< 0.006 %	< 0.02 %	
2TRACK -> MAIN OUT	< 0.006 %	< 0.015 %	

CROSSTALK AND DAMPING

	f = 1kHz	f = 10 kHz	Remarks
Fader attenuation			
MONO CHANNEL	> 80 dB	> 80 dB	
STEREO CHANNEL	> 80 dB	> 75 dB	
MASTER	> 80 dB	> 80 dB	
MONO	> 80 dB	> 75 dB	
AUX/FX	> 80 dB	> 80 dB	
Control attenuation			
AUX	> 80 dB	> 75 dB	
PAN (BAL)	> 60 dB	> 60 dB	
2 TRACK RETURN	> 90 dB	> 90 dB	
Switch-off attenuation			
STANDBY	> 90 dB	> 80 dB	
Crosstalk			
Power amplifier L/R	> 80dB	> 75 dB	Power Amp In / 8 ohms
Channel - Channel	> 70 dB	> 70 dB	
Common mode rejection			
CMRR MIC	> 80 dB	> 60 dB	
CMRR LINE	> 40 dB	> 40 dB	
CMRR STEREO LINE	> 40 dB	> 40 dB	

NOISE INTERFERENCE

- U(F) = extraneous voltage un-weighted with B = 22 Hz … 22 kHz, effective value (IEC 268-1)
- U(G) = noise voltage, frequency-weighting filter according to CCIR-468-3, quasi peak weighted (IEC 268-1)
- U(A) = interference voltage A-weighted, dB(A), effective value (IEC 268-1)
- Signal-to-noise ratio referenced to a nominal output voltage of 36.9 V (+33.5 dBu) at 4 ohms, respectively 1,55V (+6dBu) at the mixer output with interference voltage A-weighted.

Measurement	U(F)	U(A)	U(G)	IN (A)	S/N-Ratio(A)	Output	Remarks
Power amplifier	-70 dBu	-72 dBu	-59 dBu	------	105 dB	SPEAKER OUT	Power Amp In, R(Q) = 50 Ω
Residual noise Master	-88 dBu	-90 dBu	-77 dBu	------	96 dB	MAIN OUT	MASTER closed
Noise at the MASTER sum	-88 dBu	-89 dBu	-76 dBu	------	------	MAIN OUT	MASTER open 0dB, Channel closed
typical mixer noise	-81 dBu	-83 dBu	-70 dBu	------	------	MAIN OUT	All faders at 0 dB, Unity Gain
MIC (150 ohms)	-68 dBu	-70 dBu	-57 dBu	130 dBu	------	MAIN OUT	Gain max. (60 dB) Master at 0dB

LINE (50 ohms)	-59 dBu	- 60 dBu	- 47 dBu	100 dBu	------	MAIN OUT	Gain max. (40 dB)

Power amplifier ATTENUATION > 200

Power amplifier SLEW RATE > 20 V/µs

INDICATORS

PEAK / Channel : 6 dB below full modulation
SIGNAL / Channel : 25 dB below PEAK-indication
MAIN 8-segment : 27 dB ... + 6 dB (measured in dBu at the MAIN OUT)
PEAK / FX1/2 : 6 dB below full modulation

PHANTOM POWER : fixed +24V

SOUND SHAPING

	LO (shelving)	MID (peaking)	HI (shelving)
MONO (MIC) INPUT	15 dB / 60 Hz	12 dB / 2.4 kHz Q = 0.7	15 dB / 12 kHz
STEREO (LINE) INPUT	15 dB / 60 Hz	12 dB / 2.4 kHz Q = 0.7	15 dB / 12 kHz

EQUALIZER in the master section

2 x 7 Band : 80 Hz, 250 Hz, 630 Hz, 2.5 kHz, 4 kHz, 8 kHz, 16 kHz; 10 dB, Q = 1.4

EFFECT UNIT 2 separately controllable stereo effect units, 18-Bit, with UP/DOWN keys, each providing 99 preset programs (delay, reverb, modulation and mixed programs)

DIMENSIONS AND WEIGHT

	PM 600 Console	**PM 600 Rack Mount**	**PM 600 Wall Mount**
Width	455.5 mm	483 mm	455.5 mm
Height	175.8 mm	310.3 mm (7 HU)	340.6 mm
Depth	340.6 mm	159 mm	mm
Weight	13 kg	13.5 kg	14 kg

EXTENSIONS

NRS 90 239 Rack-mount ears for the PM 600 No. 112 741
NRS 90 242 Wall-mount kit for the PM 600 No. 112 742

ACCESSORY **DCN 110693** Footswitch FS11

MOUNTING INSTRUCTION when vertically mounting the mixer in a rack-shelf system
To prevent the appliance from suffering from thermal overload, it is necessary to install blind panels with ventilation louvres and with a height of 2 HU each, above and below the PM600. During the operation, both, the front and the rear of the rack-shelf system have to be opened.

Measuring Specifications: complete device, PM 600

measuring conditions :

measuring tolerance :	X = 1.5 dB
measuring frequency :	f = 1 kHz
stated levels refer to :	U = 775 mV (0 dBu)
source impedance Line	R(Q) = 50 Ω
source impedance MIC	R(Q) = 150 Ω
load impedance mixer outputs	R(L) = 100 kΩ
load impedance headphones	R(L) = 2 x 200Ω
load impedance power amplifier:	R(L) = 4 , 8Ω
EQ-, PAN-, BAL - controls	center position
FADER	0 dB setting
Gain control	Unity Gain = 0 dB (MIC 20 dB)
AUX-, LEVEL - controls	center position
measuring standards:	IEC 268, IHF-A
security class:	I
test voltage IEC65:	3000 Vrms
U(F) = extraneous voltage	un-weighted with B = 22Hz ... 22 kHz, effective value (IEC 268)
U(G) = noise voltage	frequency-weighting filter according to CCIR-468-3, quasi peak weighted (IEC 268)
U(A) = interference voltage	A-weighted, dB(A), effective value (IEC 268)

- The printed board assemblies 84192/........ are provided with service connectors. The pin-assignment of the service connectors is:

CNS 1	pin-assignment	CNS 2	pin-assignment
1	+ Vcc	1	LIM L
2	BIAS + L	2	-15 V
3	BIAS - L	3	LIM R
4	FAN-Voltage	4	+15 V
5	- Vcc	5	GND
6	BIAS + R	6	+24 V
7	BIAS - R	7	Relay
8	Temp +Heatsink	8	+5 V

1. Operating voltages:

PM 600, Europe	U(B) = 230V / 50Hz ... 60 Hz
PM 600, Japan	U(B) = 100V / 50Hz ... 60 Hz
PM 600, U.S.A./Canada	U(B) = 120V / 50Hz ... 60 Hz
PM 600, Australia	U(B) = 240V / 50Hz ... 60 Hz

2. Operating voltage deviation range: - 30% .... +10%

3. Power and current consumption (both channels driven):

		PM 600	PM 600
	power consumption	**current consumption**	**current consumption**
idling	40....60 W	-----	-----
nominal operation (RL=4 ohms)	1000 W	5.0 A / 230 V	9.5 A / 120 V

4. Setting /Adjustments :

4.1. IDLING CURRENT ADJUSTMENT :

Connect the DC-volt meter at the BIAS measuring points (refer to table) and adjust the idling current via the trim potentiometer (on the printed board assemblies 84192 / 84....). Adjust both power amplifier channels LR.

setting	measuring point 1	measuring point 2	U (DC)	BIAS trimmer
BIAS L	CNS 1.2	CNS 1.3	6.5 mV	VR101
BIAS R	CNS 1.6	CNS 1.7	6.5 mV	VR301

Adjusting the idling current has to be performed at normal room temperature. In case the power amplifier had previously been operated, it has to be given several hours to regain normal temperature.
4.3. VCA - OFFSET:
Rhythmically open and short-circuit CNS 2.1 and CNS 2.2 for the left channel and CNS 2.3 and CNS 2.2 for the right channel. The CNS' are located on the printed board assemblies 84192/84…. Use VR100 respectively VR300 to adjust the power amplifier outputs to their minimum offset (with oscilloscope to minimal peak value or to the audible minimal volume of the interfering pulse).

5. Function test :
5.1. OUTPUT - offset voltage
DC-measurement at the loudspeaker outputs LEFT / RIGHT with U(DC) $\leq \pm$ 10mV.

5.2. LIMITER
5.2.1. Attenuation test
Both channels separately driven with a 1 kHz signal and up to U(A) = 40 V (without load). Increase the input voltage by 10 dB. The LIMITER LED lights and the output voltage ascents by approximately 1 dB to approximately 45 V, slightly clipping. The distortion rate of the limited signal is at THD = 1.0 ... 1.5 %. Increasing the input signal up to a value of + 20 dBu should not result in remarkably higher clipping.
5.2.2 . Attack- and Release times
tests have to be performed for both channels of the power amplifier individually: testing has to be performed without load resistors connected.
1.) Drive the power amplifier with a burst signal (f = 1kHz, 10 cycles, Rate : ≈ 0.5 sec.) and U(E) = +16dBu at the Power Amp Input.
2.) Monitor the output signal via oscilloscope. After 3 to 4 signal periods, the limiter has controlled the major distortion down to a minor residual distortion (THD = 1% .... 1.5 %).
attack time : 3 - 4 ms
release time: 30 - 40 ms

5.3 POWER-ON DELAY :
Make sure that the signal is present at the power amplifier input. Switch the power amplifier via the Power-On switch on. Approximately 2 seconds after switching the power on, the signal will be present at the output. The relay E1 which is located on the printed board assembly 84192/2 bridges the NTC-resistor that controls the initial inrush current limiter.

5.4 FAN CONTROL :
Upon switching-on the power amplifier, the fans will run for approximately 2 seconds and stop when the power amplifier has regained its "normal" temperature. In idling condition (power-on, no signal present) the fans are switched between the SLOW and OFF mode, depending on the heat sink's temperature. Removing the connector CN18 lets the fans run in FAST mode. Measuring the fan voltage -5.5 VDC has to be performed between CNS 1.4 and CNS 2.5.

5.5. SOAR-PROTECTION TEST:
Channels separately driven up to 35V at 4Ω . Connect an 1Ω resistor parallel. The protection circuit reacts and tries continuously to re-start! The protect-LED lights. Repeat the test with a 2 ohms resistor. The power amplifier should not switch off.

5.6. SHORT-CIRCUIT CURRENT-LIMITING TEST :
Testing has to be performed for both channels of the power amplifier individually and without load:
- drive each channel with a burst signal (f = 1kHz, 1-3 cycles, rate: 1 sec.), and U(E) = +6dBu and with a load resistor of 1 Ω connected.
- the short-circuit current-limiter limits the output voltage at the load resistor symmetrically (monitor via oscilloscope) to a peak voltage value of 16V - 18V (approx. 16A - 18A maximum peak-current output).

5.7. DC-VOLTAGE PROTECTION TEST :
Only possible when measuring a single printed board assembly.
Individually perform the test for both power amplifier channels:
- feed the power amplifier with a test signal (f = 4 Hz) at FET Q 103, respectively Q 303 Drain and drive the corresponding channel without load resistor connected.

- starting at an input voltage of approximately 10 dBu, the protection circuit reacts and tries continuously to re-start! The Protect-LED lights.
- Repeat the test with f = 14 Hz. The power amplifier should not switch off.
5.8. HF-PROTECTION TEST :
Caution: Perform this test only without load resistors connected to the power amplifier. Feed a +20 dBu sine burst signal **f = 80 - 100 kHz** (40ms ON, 960 ms OFF) to each channel of the power amplifier. The protection circuit has to react. The power amplifier tries to re-start continuously. the PROTECT-LED blinks in the same rhythm.
Repeat the test with **f = 50 kHz**. The power amplifier should not switch off.

6. Level
All level controls within the signal path set to fully open.

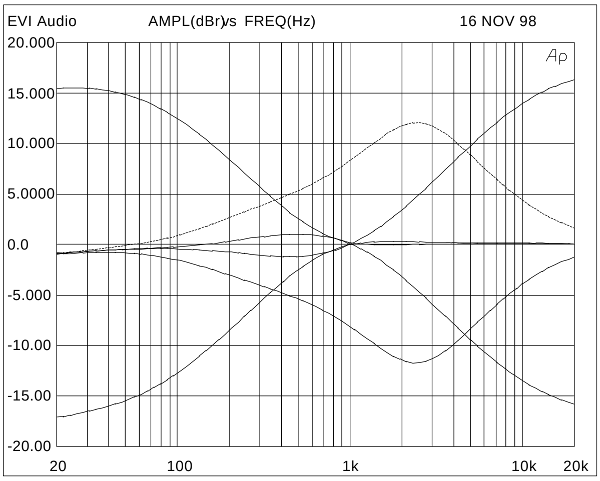
Input	U(E)	Output	U(A)	Remarks
MIC Mono	-60 dBu	MAIN OUTPUT L&R	20 dBu	Gain max.
LINE Mono	-60 dBu	SPEAKER L&R	28 dBu	(19.5 V)
LINE Mono	-60 dBu	AUX	+6 dBu	
LINE Mono	-60 dBu	REC. SEND L&R	-16 dBu	
LINE Mono	-60 dBu	PHONES L&R	+2 dBu	
LINE Stereo L/Mono	-34 dBu	MAIN OUTPUT L&R	+6 dBu	
LINE Stereo R	-34 dBu	MAIN OUTPUT R	+6 dBu	
LINE Stereo L/Mono	-34 dBu	AUX	+10 dBu	
LINE Stereo L/Mono	-34 dBu	MONO	+16 dBu	
2 TRACK RET. L&R	-20 dBu	MONO OUTPUT	0 dBu	either L or R
2 TRACK RET. L&R	-20 dBu	AUX	-12 dBu	either L or R
POWER AMP INPUT L&R	+ 6 dBu	SPEAKER L&R	+33 dBu	(34.7 V) signal, without distortion

7. Amplitude - Non-linearity
Measuring the power amplifier with 8 ohms load resistors connected and driving a single channel
MBW = 80 kHz,

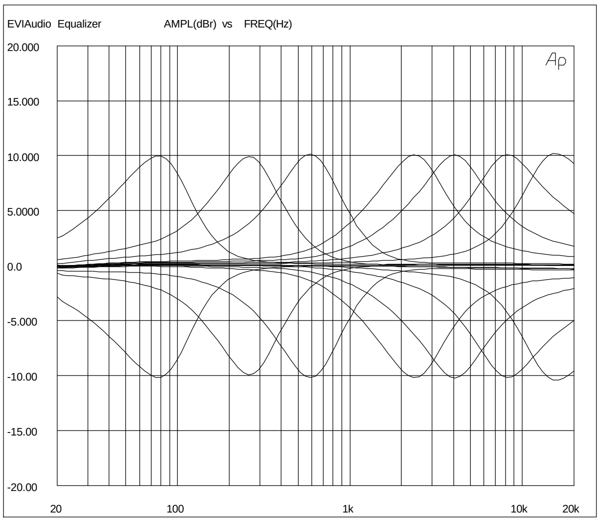
- DIM 30: 3.15 kHz, 15 kHz
- SMPTE: 60 Hz, 7 kHz, 4:1

Input	Output	THD+N at 1kHz	THD+N at 10kHz	DIM 30	SMPTE	Remarks
MIC Mono	MAIN OUT L&R	< 0.006 %	< 0.02 %	< 0.01 %	< 0.01 %	U(A) = 16dBu
LINE Mono	MAIN OUT L&R	< 0.006 %	< 0.02 %	< 0.01 %	< 0.01 %	U(A) = 10 dBu
LINE STEREO	MAIN OUT L&R	< 0.006 %	< 0.02 %	< 0.01 %	< 0.01 %	U(A) = 10 dBu
POWER AMP IN	SPEAKER OUT L&R	< 0.03 %	< 0.1 %	< 0.03 %	< 0.05 %	Pab = 150W

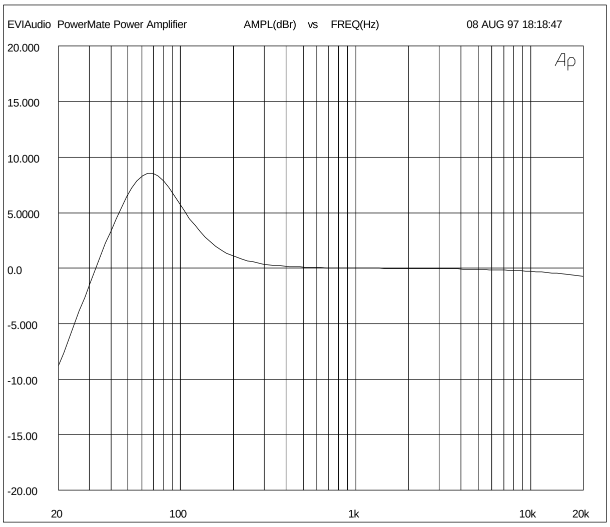
8. Frequency response



EQ Mono / Stereo Input HI / MID / LO



7-BAND EQUALIZER MASTER



Power Amplifier PM 600

8.2. Frequency margins - 3 dB @ 1 kHz

All level controls within the signal path set to fully open.

		PM 600	
Input	Output	f(u)	f(o)
MIC Mono	SPEAKER L&R	38 Hz	45 kHz
LINE Mono	SPEAKER L&R	38 Hz	38 kHz
LINE Stereo	SPEAKER L&R	30 Hz	28 kHz
Power Amp In	SPEAKER L&R	30 Hz	50 kHz
LINE Stereo	AUX	10 Hz	33 kHz
LINE Stereo	MONO OUT	10 Hz	33 kHz
LINE Stereo	REC.SEND	10 Hz	33 kHz

9. Noise interference

- U(F) = extraneous voltage un-weighted with B = 22 Hz … 22 kHz, effective value (IEC 268-1)
- U(G) = noise voltage, frequency-weighting filter according to CCIR-468-3, quasi peak weighted (IEC 268-1)
- U(A) = interference voltage A-weighted, dB(A), effective value (IEC 268-1)
- Signal-to-noise ratio referenced to a nominal output voltage of 36.9 V (+33.5 dBu) at 4 ohms, respectively 1,55V (+6dBu) at the mixer output with interference voltage A-weighted.

Input	Output	U(F) dBu	U(G) dBu	U(A) dBu	GAIN dB	IN (A)dBu	S/N-Ratio dB	Remarks
Power Amp In	SPEAKER L&R	-70	-59	-72	27	---	105	Power Amp In R(Q) = 50 Ω
----	MAIN OUT	-88	-77	-90	---	---	---	Master closed
----	MAIN OUT	-81	-70	-83	---	---	---	Master open, Channel closed
MIC Mono	MAIN OUT	-47	-36	-49	80	-129	---	MASTER, CHANNEL and Gain open. R(Q) = 150Ω
MIC Mono	MAIN OUT	-75	-64	-77	30	-107	---	MASTER, CHANNEL open and Gain closed. R(Q) = 150Ω
LINE Stereo	MAIN OUT	-46	-35	-48	40	-88	---	MASTER, CHANNEL and Gain open
LINE Stereo	MAIN OUT	-73	-63	-75	10	-85	---	MASTER, CHANNEL open and Gain closed
LINE Mono	MONO OUT	-65	-55	-67	20	-87	---	MONO, MASTER, CHANNEL open and Gain closed
---	AUX	-71	-60	-73	---	---	---	AUX open, CHANNEL closed
---	2 TRACK	-96	-87	-100	---	---	---	CHANNEL closed

10. Operating voltages and service measuring points

Voltages measured at the corresponding pin to GND CNS2.5

84192 84.....	**Power Amp**	**Measured in idling condition**	**interference and ripple voltage U(F)rms**
CNS 1	**Assignment**		
1	+Vcc	+ 65 VDC	50 mVrms
2-3	BIAS L	6.5 mV	-----
4	FAN-Voltage	stage 0: +24 V stage I: +6.5 V stage II: -5.5 V	-----
5	-Vcc	- 65 VDC	50 mVrms
6-7	BIAS R	6.5 mV	-----
8	Temp +Heatsink	variable *1	-----
CNS 2			
1	LIM L	-----	-----
2	-15 V	-15.5 VDC	100 µVrms
3	LIM R	-----	-----
4	+15.5 V	+15.5 VDC	100 µVrms
5	GND	GND	-----
6	+24 V	24...26 VDC	50 µVrms
7	Relay	-24 VDC	-----
8	+5 V	+5 VDC	10 mVrms

*1 see number 11

11. Temperature of the heat sink

DC-voltages measured at CNS 1.8 to CNS 2.5 (GND)

Heat sink temperature	25 °C	40°C	60°C	80°C	100°C	120°C	130°C
	2.5 V	4.3 V	7.2 V	10V	12 V	13.6 V	14.2V

The switch-off point is at approx. 130 °C. The power amplifier enters Protect-Mode.

12. Phantom power

DC-voltages of **+ 24 ... + 26 volts** are present at the XLR-type input connectors; between pin 2 and pin 1, respectively between pin 3 and pin 1.

13. Effect unit

13.1 Level

- FX-control, channel fader, FX-fader, FX1 to AUX, respectively FX2 to AUX, AUX-fader, Master L&R fader at their maximum position.
- FX1 ON-switch, respectively FX2 ON-switch ON. Selected effect program: 0 / 0.

Input	U(E)	Output	U(A)	Remarks
MIC MONO	-40 dBu	MAIN OUTPUT L&R	-3 dBu	Gain min.
MIC MONO	-40 dBu	AUX	-3 dBu	Gain min.
Line STEREO L / MONO	-20 dBu	MAIN OUTPUT L&R	-4.5 dBu	Line Trim min.
Line STEREO L / MONO	-20 dBu	AUX	-4 dBu	Line Trim min.
Line STEREO R	-20 dBu	AUX	-10 dBu	Line Trim min.

13.2 Noise interference

- U(F) = extraneous voltage un-weighted with B = 22 Hz … 22 kHz, effective value (IEC 268-1)
- U(G) = noise voltage, frequency-weighting filter according to CCIR-468-3, quasi peak weighted (IEC 268-1)
- U(A) = interference voltage A-weighted, dB(A), effective value (IEC 268-1)

Output	U(F)	U(G)	U(A)	Remarks
MAIN OUTPUT L&R	-58 dBu	-49 dBu	-60 dBu	MASTER and FX1 / FX2-faders max. Prog. 0
AUX	-60 dBu	-52 dBu	-64 dBu	AUX-fader, FX1 / FX2 to AUX max. Prog. 0
MAIN OUTPUT L&R	-59 dBu	-49 dBu	-60 dBu	MASTER and FX1-faders max. Prog. 5
MAIN OUTPUT L&R	-58 dBu	-49 dBu	-60 dBu	MASTER and FX2-faders max. Prog.55

13.3 Function test:

Drive the effect units FX1 and FX2, monitor while changing the programs.
7-segment LED-display: All graphs have to be displayed with equal brightness.
The effect unit should not generate digital noise or excessive analog noise in the audio band.
Switching the effects on and off via FX1/2 ON/OFF should not result in switching noise.
Switch the effect on and off via footswitch.

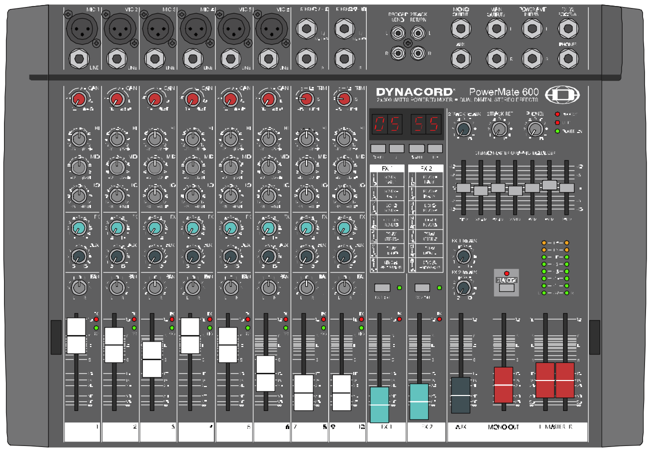
14. Indicators

With the mentioned input voltage applied, the LED begins to light. Gain and FX-controls set to their maximum position.
Tolerance: +/- 2 dB.

Indication	Input	U(E) / dBu
SIGNAL / Mono channel	LINE Mono	- 52
PEAK / Mono channel	LINE Mono	- 26
SIGNAL / Stereo channel	LINE Stereo L/Mono	- 32
PEAK / Stereo channel	LINE Stereo L/Mono	- 6
PEAK FX1/FX2	LINE Mono	- 50

The display in the master section directly indicates the corresponding output level of the MAIN OUT in dBu.
Check the indicated display value of the MAIN OUT for each LED.

DYNACORD®



Technische Informationen

Architects and engineers specifications

PowerMate 600

POWERED MIXER

BESCHREIBUNG

Die PowerMate 600 Kompaktanlage basiert auf mehreren Jahrzehnten Erfahrung, Forschung und Kundennähe im professionellen Audiobereich. Hier haben Sie ein Gerät in dem alles optimal aufeinander abgestimmt ist. Durch die ergonomische Pultform und die übersichtlich, strukturierte Anordnung der Bedienteile haben Sie immer alles im Blick und können schnell und problemlos auf jedes Detail zugreifen. Auch beim Transport des PowerMate werden Sie bald seine Vorzüge zu schätzen wissen. Griffe links und rechts im Seitenteil sowie das geringe Gewicht erlauben Ihnen einen problemlosen Transport des Gerätes, wobei alle empfindlichen Teile wie Knöpfe und Regler von einer stabilen Schutzhaube abgedeckt sind. Mit seiner großen Anzahl von Funktionen, hohen Dynamik, rauscharmen Design, dem 18bit-Dual-Stereo-Effektteil und der 2x300W/4Ohm starken Endstufe ist der PowerMate universell einsetzbar. Egal ob auf der Bühne, beim Homerecording oder in der Festinstallation, zeigt sich der PowerMate als idealer Partner und wird Ihre hohen Ansprüche, die Sie natürlich an ein professionelles Audiogerät stellen, souverän und zuverlässig erfüllen.
Die sechs MIC/Line-Kanäle mit ihren elektronisch symmetrierten XLR- und Klinkeneingängen sind mit einem Gainregler zur Anpassung des Eingangspegels und einer Dreibandklangregelung mit perfekt abgestimmten Einsatzfrequenzen ausgestattet. Mit dem FX-Regler wird das Eingangssignal den Effektteilen zugemischt, und mit dem AUX-Regler das Eingangssignal auf die Ausgangsbuchse AUX an den Sie zum Beispiel eine Monitoranlage anschließen. Über den PAN-Regler können Sie die Position des Eingangssignals im Stereopanorama festlegen, die Lautstärke regeln Sie sanft und präzise über die 60mm Fader.
Die beiden Kanäle 7/8 und 9/10 sind zusätzliche echte Stereokanäle für den Anschluß von Stereoquellen wie Keyboards, Drummachines, CD-Playern etc. vorgesehen. Darüber hinaus verfügt die PowerMate 600 über einen 2Track send/return für die Verwendung mit Kassettendeck oder MD-Recorder, der auch bei Benutzung der STANDBY Funktion aktiv bleibt, so daß alle normalen Eingangskanäle aus sind, ohne die Reglereinstellungen zu verändern, und das Signal vom Rekorder trotzdem, zum Beispiel für Pausenmusik, verstärkt werden kann. Die Lautstärke wird hierbei über den 2TRACK RET-Regler eingestellt.

Der 7-Band Stereoequalizer erlaubt ein feinfühliges Anpassen der Musik bzw. des zu übertragenden Signals an die akustischen Gegebenheiten des Raumes. Die Einsatzfrequenzen sind dabei so gewählt, daß optimale Ergebnisse erzielt werden können. Ein zusätzlicher Monoausgang und eine Masteranzeige machen die Ausstattung komplett.

DESCRIPTION

The design of the PowerMate 600 compact power mixer is based on decades of experience, research and development as well client inter-communication in the professional audio market. With the PowerMate you own a power mixer that offers a wide range of functionality in a very compact frame. All the troubling experiences with cabling and matching mixers, amplifiers, FX units, and equalizers is history. You now own a device with optimally matched components.
The mixer's ergonomic shape and clearly structured controls allow instant access at all times. Also during the transport you will quickly learn to appreciate the PowerMate's superiority: recessed handles on both sides, compact dimensions and low weight. Additionally, a sturdy dust hood protects the controls against damaging. Through its multiple functions, its high dynamic capacity, and extremely low-noise design in combination with the 18bit-Dual-Stereo effects unit and the high-performance 2x300W/4ohms power amplifier, the PowerMate is best equipped for universal use. No matter, whether on-stage, in a home recording environment or in a permanent installation, DYNACORD's PowerMate is the ideal partner to meet your expectations of a professional audio device - effective and reliable.
The six Mic/Line-channels incorporate electronic balanced XLR-type and jack-type input connectors, gain controls that allow optimally matching the input levels, and 3-band EQ-sections with perfectly tailored start frequencies. The "FX"-control determines the amount of the input signal that is send to the effect units. The "AUX"-control sets the input signal level that is send to the AUX-output, which can be used for the connection of the stage-monitor system. The "PAN"-control allows you to adjust the position of the input signal in the stereo image while the precise and smooth setting of a channel's volume is done via the corresponding 60mm fader control.

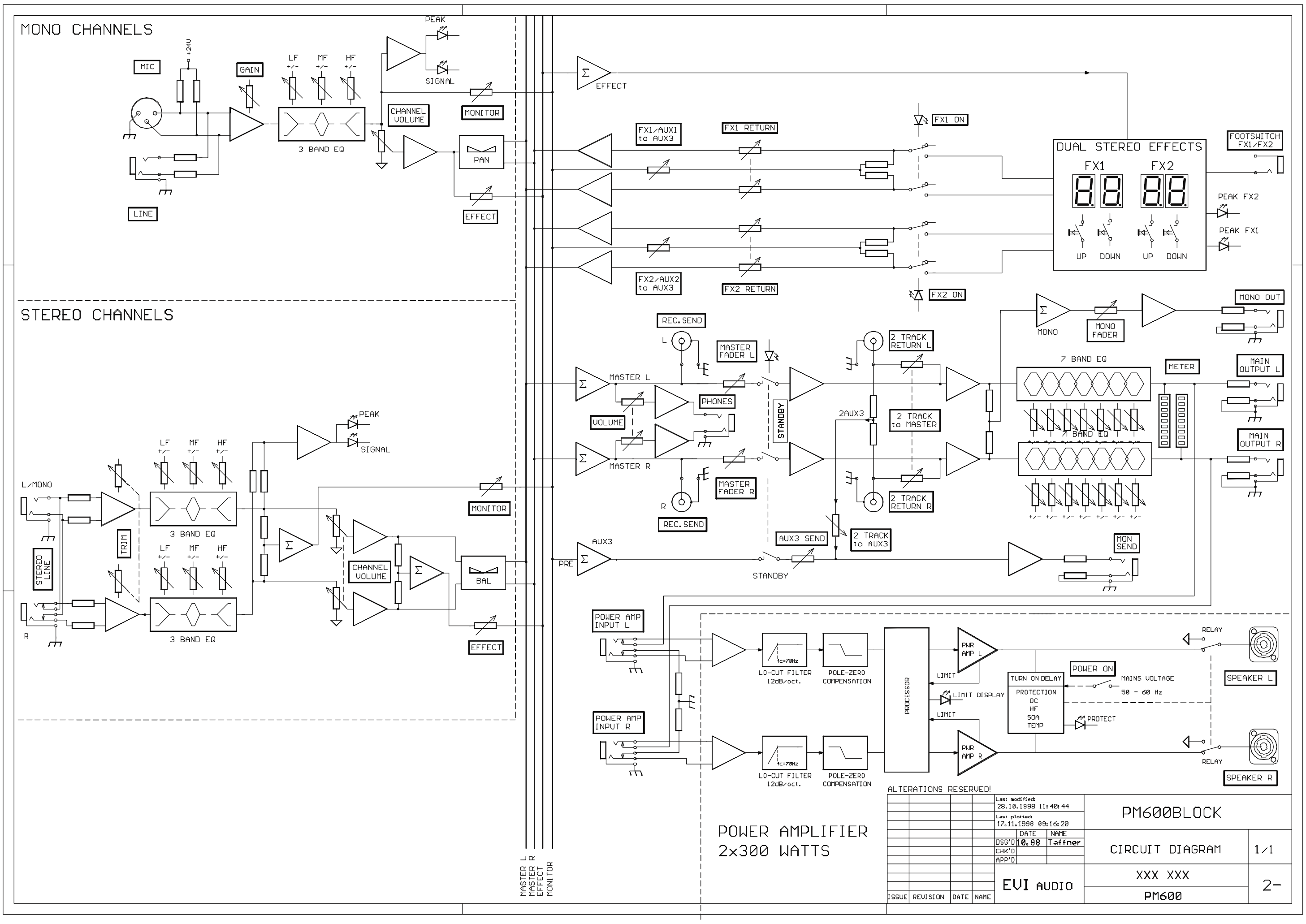
The channel pairs 7/8 and 9/10 are configured as true stereo channels and are meant for the connection of stereo signal sources, like keyboards, drum computers, CD-players, etc. Additionally, the PowerMate 600 has a "2Track send/return" connector which allows the direct feed from cassette decks or MD-recorders. The 2Track send/return stays active even through the PowerMate is set to "STANDBY". In this way all input channels are muted without the need to change the actual fader positions. Nevertheless, the tape deck signal can pass, which for instance provides the possibility to transmit intermission music, where the program's volume is adjusted using the "2TRACK RET"-control. The 7-band stereo equalizer allows precisely matching the transmitted signal to individual environmental and acoustic conditions. The center frequencies of the seven bands are set to values that allow the achievement of optimum results. An additional monaural output and a metering instrument indicating the master level complete the output section.

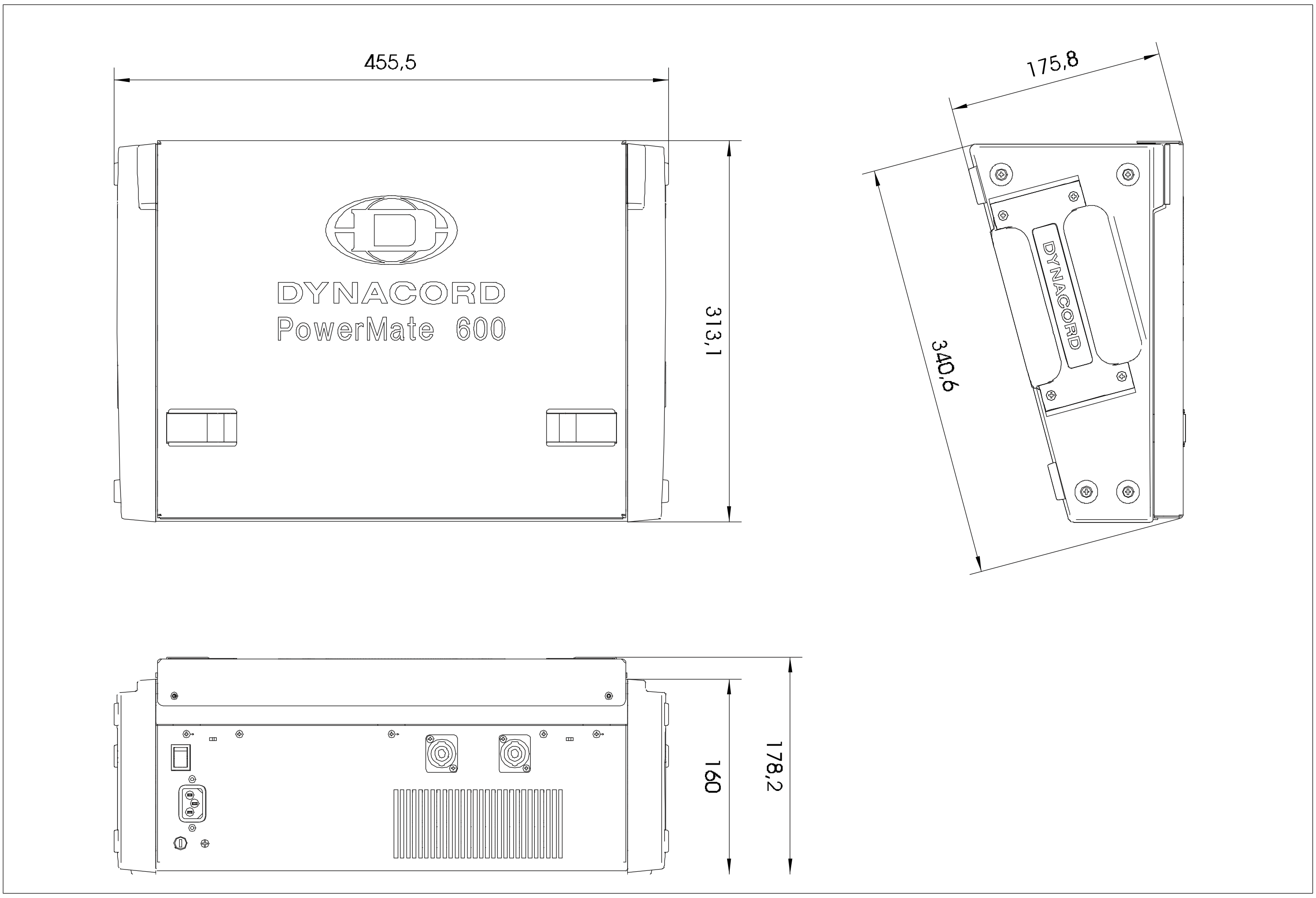
INTRODUCTION

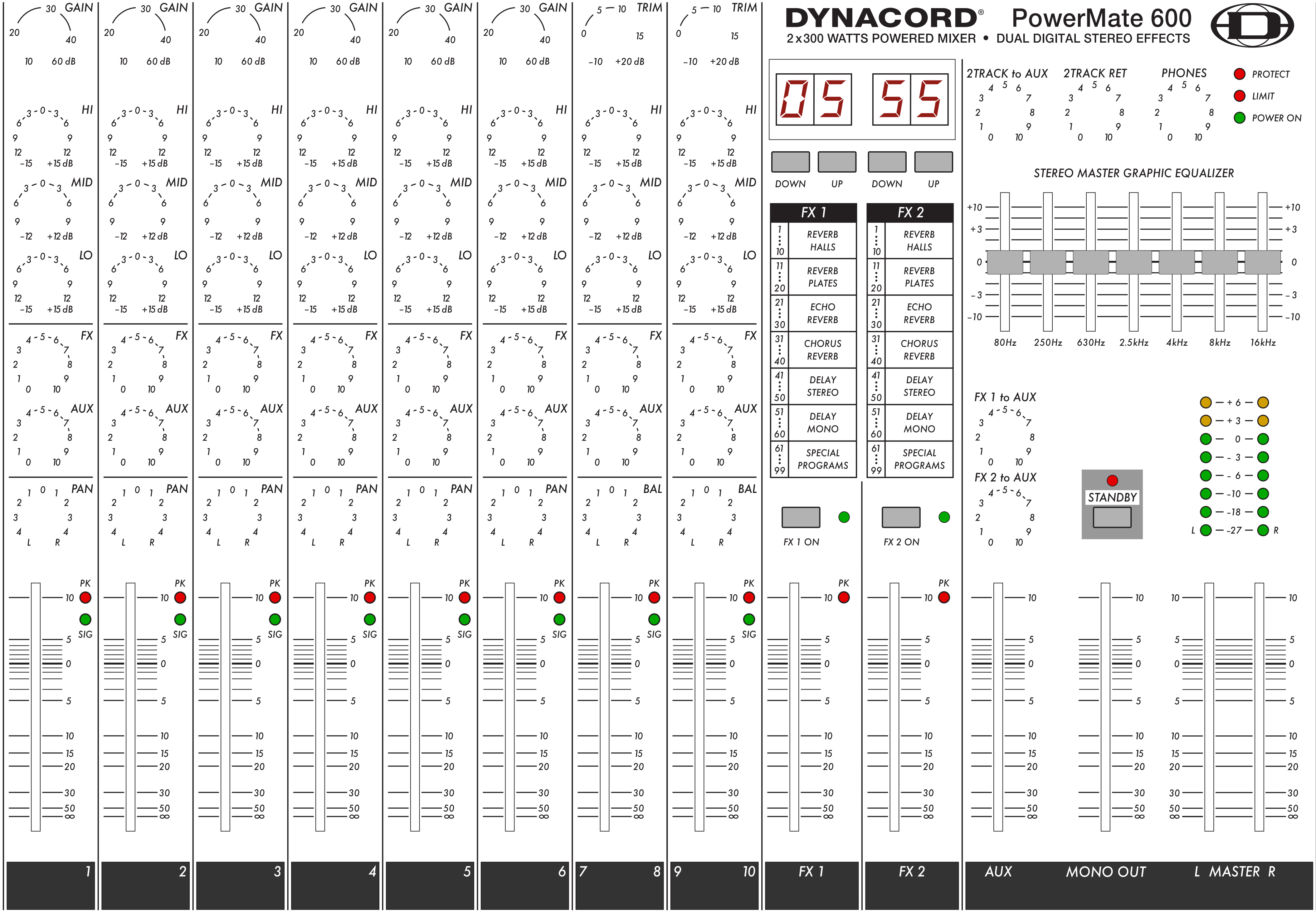
La conception de la PowerMate 600 s'appuie sur des dizaines d'années d'expérience, de recherche et de développement, d'écoute de nos clients du milieu audio professionnel. La PowerMate est une console amplifiée très compacte, mais offrant de nombreuses possibilités. Fini, les problèmes dus au câblage et à l'adaptation entre consoles, amplificateurs, multieffets et égaliseurs ! La PowerMate rassemble tout cela, pour une adaptation optimale. La forme ergonomique de la console et l'organisation claire de sa surface de contrôle permet à tout moment un accès instantané à toutes les commandes. Vous apprécierez également la supériorité de la PowerMate lorsque vous la transporterez : poignées encastrées disposées de chaque côté, compacité, poids modéré. De surcroît, un robuste capot protège les commandes de tout dommage. La PowerMate est vraiment universelle : fonctions multiples, bruit de fond très faible, deux effets 18 bits stéréo et amplificateur incorporé 2x300 Watts (sur 4 Ohms) de hautes performances. Que vous l'utilisiez sur scène, en home studio ou dans le cadre d'une installation fixe, la DYNACORD PowerMate est votre partenaire idéal, efficace et fiable, et satisfera tous les besoins que vous attendez d'une console audio professionnelle. Les six voies micro/ligne possèdent des connecteurs d'entrée symétrisés électroniquement, de type XLR et jack. Les potentiomètres de gain permettent d'adapter le signal d'entrée au niveau de travail interne de la console. Un égaliseur trois voies est également prévu : ses fréquences d'intervention sont parfaitement étudiées. Les potentiomètres "FX" dosent la proportion de signal envoyée aux effets, tandis que les potentiomètres "AUX" autorisent un second mixage, indépendant des généraux, pour des retours de scène par exemple. Le potentiomètre "PAN" place le son précisément dans l'image stéréo. Le fader de 60 mm permet un dosage précis du volume de la voie correspondante dans le mixage final. Les paires de voies 7/8 et 9/10, configurées comme "vraies" voies stéréo, sont prévues pour accueillir des signaux stéréo, claviers, boîtes à rythme, lecteurs de CD, etc. Par ailleurs, la PowerMate 600 dispose de connecteurs permettant de brancher directement un magnéto à cassette ou un MiniDisc, en entrée comme en sortie. Ce retour bipiste reste actif même si la console se trouve en mode Standby : toutes les voies sont alors coupées sans devoir modifier la position de leurs faders, mais le signal provenant du bipiste est quand même affecté aux généraux, ce qui permet de diffuser de la musique pendant les pauses d'un concert – le niveau étant alors réglé via le potenriomètre "2TRACK RET". L'égaliseur graphique stéréo 2x7 bandes permet d'adapter de façon optimale le mixage aux conditions acoustiques dictées par la salle – ses fréquences d'intervention sont spécialement conçues pour résoudre les problèmes les plus fréquents. La section de sortie est complétée par une sortie mono et un VU-mètre indiquant le niveau du signal du bus des généraux.

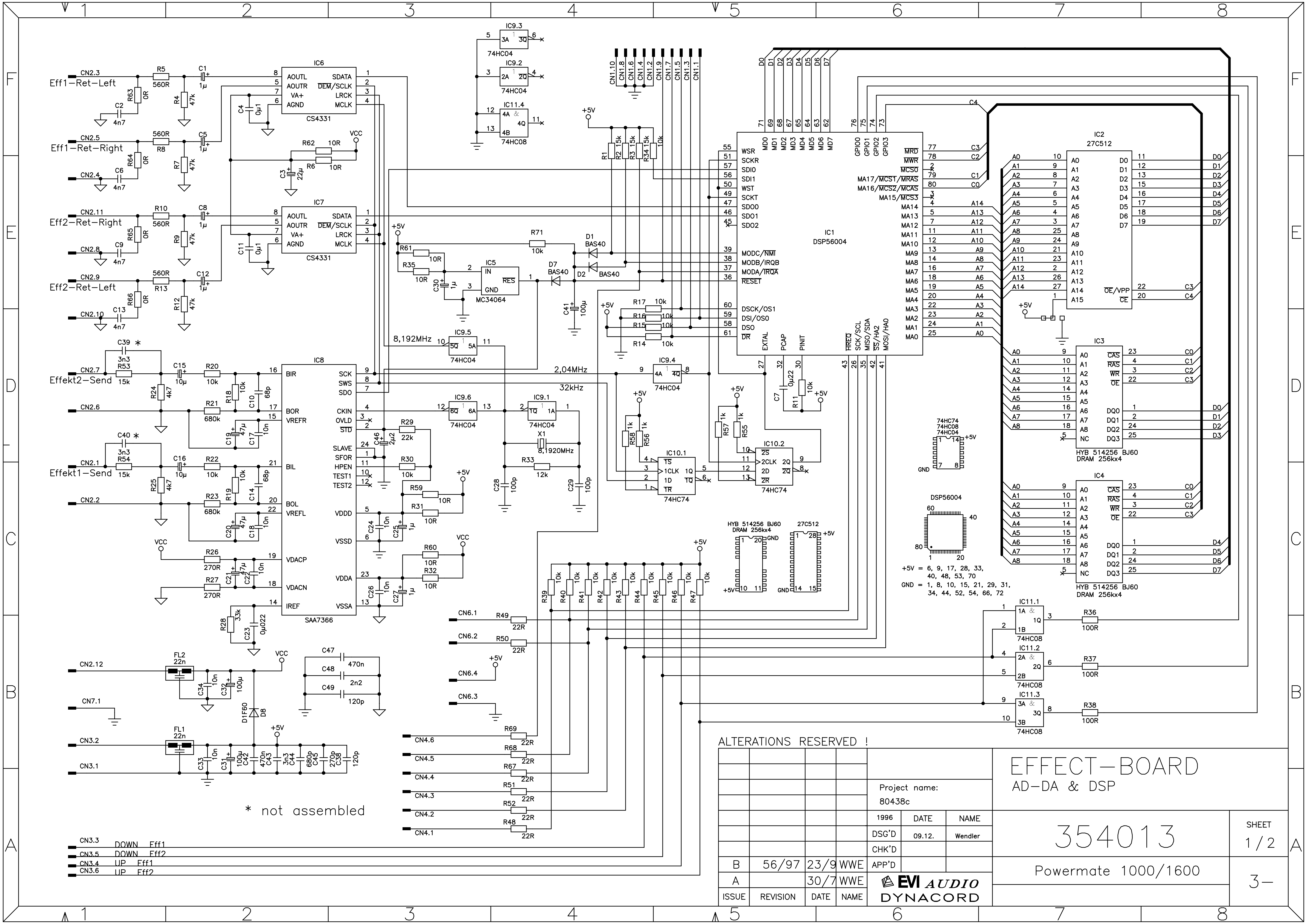
Technical Specifications PM 600

Maximum Midband Output Power, 1 kHz, THD ≤ 1 %	
into 4 ohms	2 x 340 W
into 8 ohms	2 x 200 W
Rated Output Power, 20Hz… 20 kHz, THD ≤ 0.2%	
into 4 ohms	2 x 300 W
into 8 ohms	2 x 150 W
Maximum Output Level	
of the power amplifier, no load	43 Vrms
THD @ 1 kHz MBW=80kHz	
MIC input to Main L/R output, +16 dBu	< 0.006%
Power amplifier input to speaker output L/R	< 0.08%
DIM 30, power amplifier	< 0.03%
IMD-SMPTE power amplifier, 60Hz, 7 kHz	< 0.2%
Frequency Response, -3dB ref. 1 kHz	
Any input to any mixer output	15Hz… 60kHz
Any input to speaker output L/R	30Hz... 40kHz
Crosstalk, 1 kHz	
Fader and AUX-Send attenuation	> 80 dB
Channel to channel	> 70 dB
CMRR, MIC input, 1 kHz	> 80 dB
Input Sensitivity, all volume controls up	
MIC input	-74 dBu (155µV)
Line input (mono)	-54 dBu (1.55 mV)
Line input (stereo)	-34 dBu (15.5 mV)
Power amplifier input	+6 dBu (1.55 V)
Maximum Input Level, mixer	
MIC inputs	+11 dBu
Line inputs	+30 dBu
All other inputs	+20 dBu
Record Send output	+14 dBu
All other outputs	+20 dBu
Input Impedances	
MIC	1.8 kohms
2-Track Return	10 kohms
All other inputs	> 15 kohms
Output Impedances	
Record Send	1 kohms
Phones	47 ohms
All other outputs	75 ohms
Equivalent Input Noise, MIC Input, A-weighted	-130 dBu
Noise, Channel inputs to Main outputs L/R, A-weighted	
Master fader at minimal setting	-90 dBu
Master fader 0 dB, Channel fader at minimal setting	-89 dBu
Master fader 0 dB, Channel fader 0 dB, Channel gain unity	-83 dBu
Signal/Noise-Ratio, power amplifier, A-weighted	105 dB
Equalization	
LO Shelving	±15 dB / 60 Hz
MID Peaking	±12 dB / 2.4 kHz
HI Shelving	±15 dB / 12 kHz
Master EQ, Stereo 7-band	±10 dB
Phantom Power, all MIC inputs	+24V dc
Power Requirements, factory configured	100V/120V/230V/240V 50Hz....60Hz
Power Consumption	
at 1/8 of the maximum output power at 4 ohms	450 W
Dimensions, (WxHxD), mm	455,5 x 175,8 x 340.6
Weight, including cover	13 kg
Optional accessories	
Rack-Mount-Kit	112 741
Wall-Mount-Kit	112 742
Foot switch FS	110 693


MONO CHANNELS
MIC
GAIN
LF
MF
HF
3 BAND EQ
CHANNEL VOLUME
MONITOR
PAN
EFFECT
LINE
PEAK
SIGNAL
STEREO CHANNELS
L/MONO
R
STEREO LINE
TRIM
3 BAND EQ
CHANNEL VOLUME
BAL
EFFECT
EFFECT
FX1/AUX1 to AUX3
FX1 RETURN
FX1 ON
FX2/AUX2 to AUX3
FX2 RETURN
FX2 ON
DUAL STEREO EFFECTS
FX1
FX2
UP
DOWN
FOOTSWITCH FX1/FX2
PEAK FX2
PEAK FX1
REC.SEND
MASTER FADER L
MASTER L
MASTER R
VOLUME
PHONES
STANDBY
MASTER FADER R
2 TRACK RETURN L
2 TRACK to MASTER
2 TRACK RETURN R
2AUX3
MONO
MONO FADER
MONO OUT
7 BAND EQ
METER
MAIN OUTPUT L
MAIN OUTPUT R
AUX3
PRE
AUX3 SEND
2 TRACK to AUX3
MON SEND
POWER AMP INPUT L
POWER AMP INPUT R
LO-CUT FILTER 12dB/oct.
POLE-ZERO COMPENSATION
PROCESSOR
PWR AMP L
PWR AMP R
LIMIT
LIMIT DISPLAY
TURN ON DELAY
PROTECTION DC HF SOA TEMP
PROTECT
POWER ON
MAINS VOLTAGE 50 - 60 Hz
RELAY
SPEAKER L
SPEAKER R
MASTER L
MASTER R
EFFECT
MONITOR
POWER AMPLIFIER 2x300 WATTS
ALTERATIONS RESERVED!
ISSUE REVISION DATE NAME
Last modified: 28.10.1998 11:40:44
Last plotted: 17.11.1998 09:16:20
DSG'D 10.98 Taffner
CHK'D
APP'D
EVI AUDIO
PM600BLOCK
CIRCUIT DIAGRAM
1/1
XXX XXX
PM600
2-


455,5
313,1
DYNACORD
PowerMate 600
175,8
340,6
DYNACORD
160
178,2


DYNACORD
PowerMate 600
2 x 300 WATTS POWERED MIXER • DUAL DIGITAL STEREO EFFECTS
GAIN
10 60 dB
TRIM
-10 +20 dB
HI
-15 +15 dB
MID
-12 +12 dB
LO
-15 +15 dB
FX
AUX
PAN
BAL
L R
PK
SIG
1
2
3
4
5
6
7 8
9 10
05 55
DOWN UP DOWN UP
FX 1
FX 2
1 10 REVERB HALLS
11 20 REVERB PLATES
21 30 ECHO REVERB
31 40 CHORUS REVERB
41 50 DELAY STEREO
51 60 DELAY MONO
61 99 SPECIAL PROGRAMS
FX 1 ON
FX 2 ON
2TRACK to AUX
2TRACK RET
PHONES
PROTECT
LIMIT
POWER ON
STEREO MASTER GRAPHIC EQUALIZER
+10 +3 0 -3 -10
80Hz 250Hz 630Hz 2.5kHz 4kHz 8kHz 16kHz
FX 1 to AUX
FX 2 to AUX
STANDBY
+6 +3 0 -3 -6 -10 -18 -27
L R
AUX
MONO OUT
L MASTER R



ALTERATIONS RESERVED !

ISSUE	REVISION	DATE	NAME
B	56/97	23/9	WWE
A		30/7	WWE

Project name: 80438c

1996	DATE	NAME
DSG'D	09.12.	Wendler
CHK'D		
APP'D		

EVI AUDIO DYNACORD

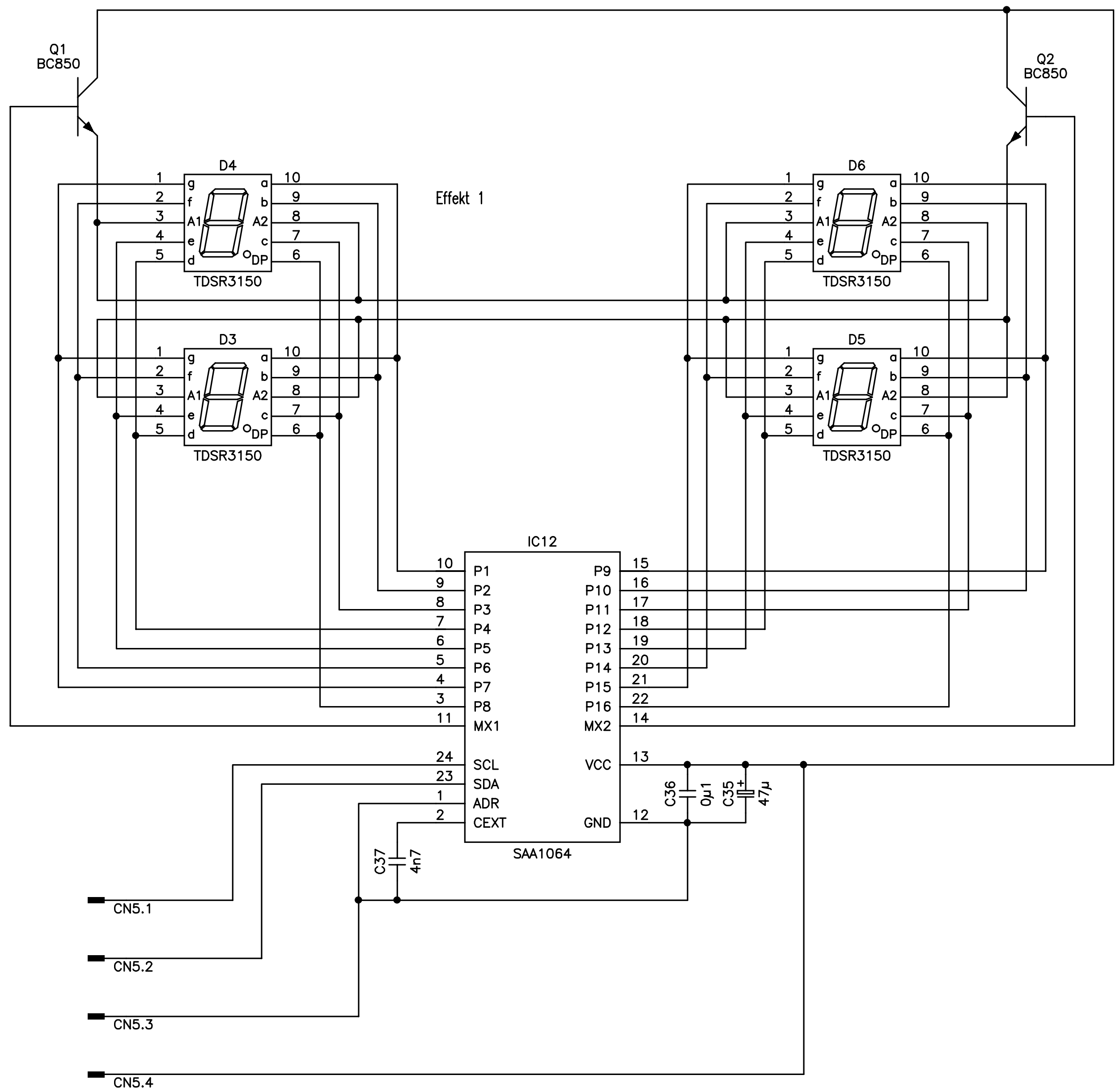
EFFECT-BOARD
AD-DA & DSP

354013

SHEET 1/2

Powermate 1000/1600

3-



ALTERATIONS RESERVED !

EFFECT–BOARD

Display

Project name:
80438c

1997	DATE	NAME
DSG'D	02.04.	Wendler
CHK'D		
APP'D		

ISSUE	REVISION	DATE	NAME

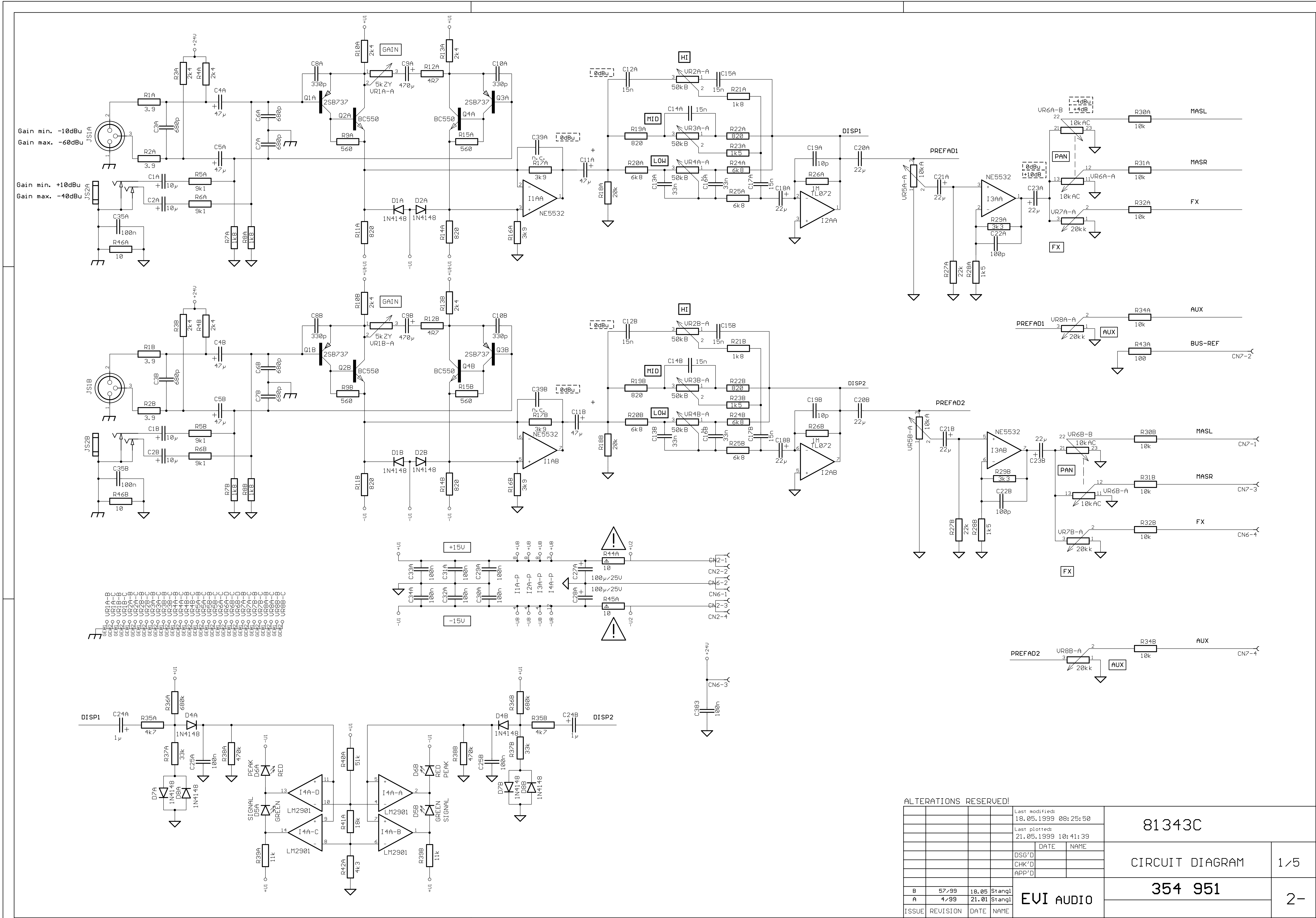
EVI AUDIO
DYNACORD

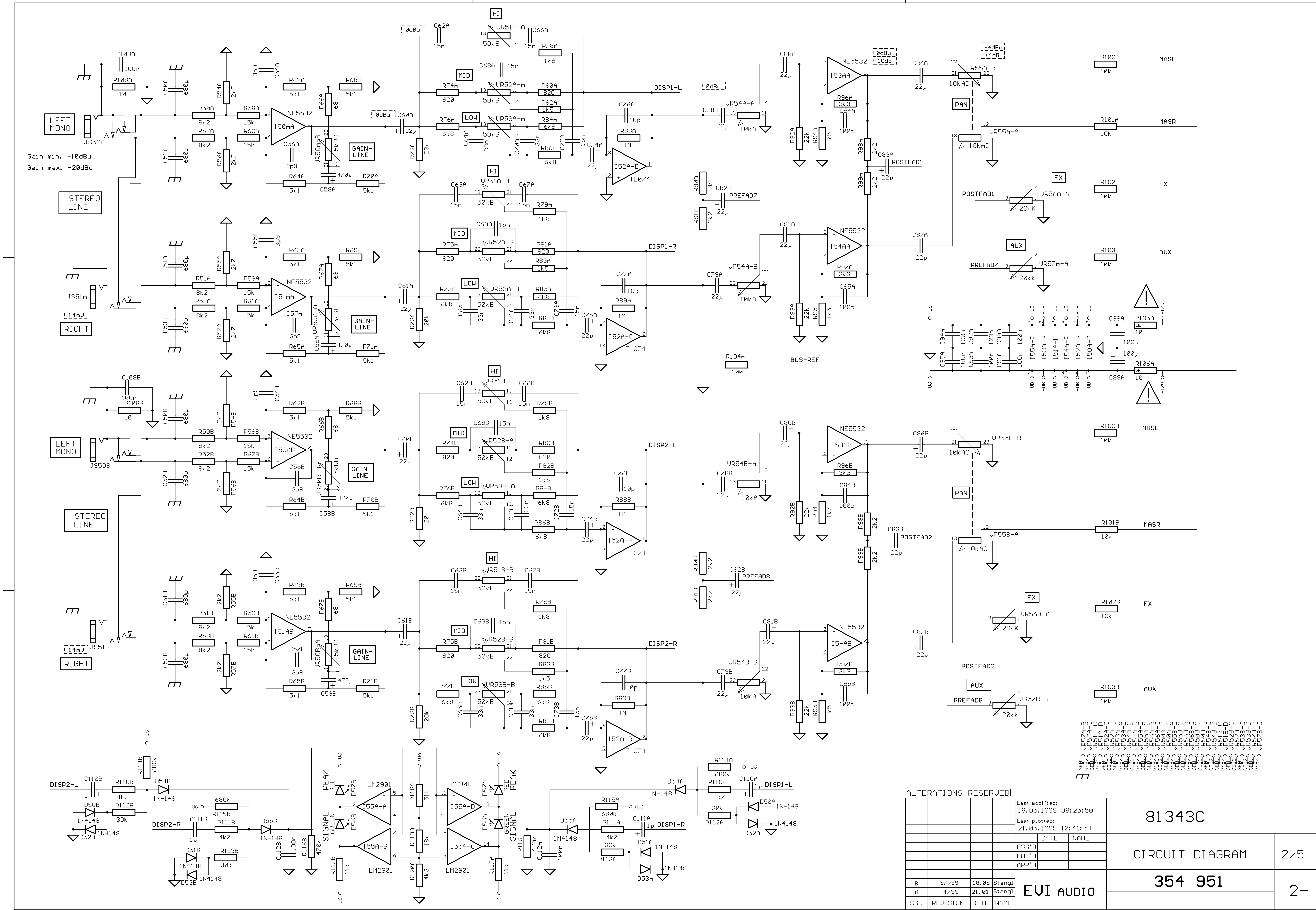
354015

SHEET
2/2


Powermate 1000/1600

4–

Gain min. -10dBu
Gain max. -60dBu
Gain min. +10dBu
Gain max. -40dBu
GAIN
HI
MID
LOW
0dBu
DISP1
DISP2
PREFAD1
PREFAD2
PAN
FX
AUX
MASL
MASR
BUS-REF
NE5532
TL072
LM2901
2SB737
BC550
1N4148
+15V
-15V
100µ/25V
PEAK
RED
SIGNAL
GREEN
ALTERATIONS RESERVED!
Last modified: 18.05.1999 08:25:50
Last plotted: 21.05.1999 10:41:39
DATE
NAME
DSG'D
CHK'D
APP'D
B 57/99 18.05 Stangl
A 4/99 21.01 Stangl
ISSUE
REVISION
DATE
NAME
EVI AUDIO
81343C
CIRCUIT DIAGRAM
1/5
354 951
2-



LEFT MONO
STEREO LINE
RIGHT
Gain min. +10dBu
Gain max. -20dBu
GAIN-LINE
HI
MID
LOW
PAN
FX
AUX
DISP1-L
DISP1-R
DISP2-L
DISP2-R
MASL
MASR
POSTFAD1
POSTFAD2
PREFAD7
PREFAD8
BUS-REF
NE5532
TL074
LM2901
PEAK RED
SIGNAL GREEN
ALTERATIONS RESERVED!
Last modified: 18.05.1999 08:25:50
Last plotted: 21.05.1999 10:41:54
81343C
CIRCUIT DIAGRAM
2/5
354 951
2-
EVI AUDIO
DATE
NAME
DSG'D
CHK'D
APP'D
B 57/99 18.05 Stangl
A 4/99 21.01 Stangl
ISSUE REVISION DATE NAME



NOTES:
AC VOLTAGE 1000 HZ, MEASURED WITH VTVM
DC VOLTAGE MEASURED WITH VOLTMETER 100kOHM/V
FADER IN RATED POSITION
ADDITIONAL GAIN WITH FADER IN MAX. POSITION
RATED CONDITIONS: GAIN POTS MIN. OR MAX.
ALL POTS IN CENTER-POSITION
ALL FADERS AT 0dB
FX 1/2 Prog. 00 00
DUAL DIGITAL EFFECTS UNIT
SAFETY COMPONENT
(MUST BE REPLACED BY ORIGINAL PART)
NE5532
TL072
LM2901
BC550
J111
ALTERATIONS RESERVED!
Last modified:
18.05.1999 08:25:50
Last plotted:
21.05.1999 10:42:09
1998
DATE
NAME
DSG'D
12/98
Lang
CHK'D
APP'D
B
57/99
18.05
Stangl
A
4/99
21.01
Stangl
ISSUE
REVISION
DATE
NAME
EVI AUDIO
81343C
CIRCUIT DIAGRAM
354 951
2-



230V - 240V 84192/1
100V - 120V 84196/1

ALTERATIONS RESERVED!

				Last modified: 29.04.1999 14:39:00
				Last plotted: 21.05.1999 10:39:57
				1990 / DATE / NAME
				DSG'D / 12.10 / Stangl
				CHK'D
				APP'D
B	15 / 99	02/99	Stangl	
	Nullserie	01/99	Stangl	
ISSUE	REVISION	DATE	NAME	

84192C


CIRCUIT DIAGRAM

354 953

PowerMate 600

EVI AUDIO

2-



SAFETY COMPONENT, FLAMEPROOF RESISTOR (MUST BE REPLACED BY ORIGINAL PART)

POWER RESISTOR 4 WATT

AC VOLTAGE 1000 HZ, MEASURED WITH VTVM

DC VOLTAGE MEASURED WITH VOLTMETER 100kOHM/V

AC VOLTAGE 50/60 HZ MEASURED VOLTMETER 2000 OHMS/V

LM 7805 | LM 317 T | LM 337 T | MJE 15030 MJE 15031 2SC 4793 BD 241 | MJE 340 MJE 350 | BC 327 BC 337 BC 550 BC 560 BC 618 | MPSA 42 MPSA 92 2N 3904 2N 9306 BF 393 | J 111 | NE 5532 CA 3080 OP 97 FP | TL 074 | MJ 15003 MJ 15004

230V - 240V 84192/1
100V - 120V 84196/1

ALTERATIONS RESERVED!

ISSUE	REVISION	DATE	NAME
E	53/00	06/00	Stangl
D	157 / 99	12/99	Lang
C	145 / 99	11/99	Lang
B	15 / 99	02/99	Stangl
	Nullserie	01/99	Stangl

Last modified: 05.06.2000 12:17:08
Last plotted: 08.06.2000 11:31:02

1998	DATE	NAME
DSG'D	12.10	Stangl
CHK'D		
APP'D		

EVI AUDIO

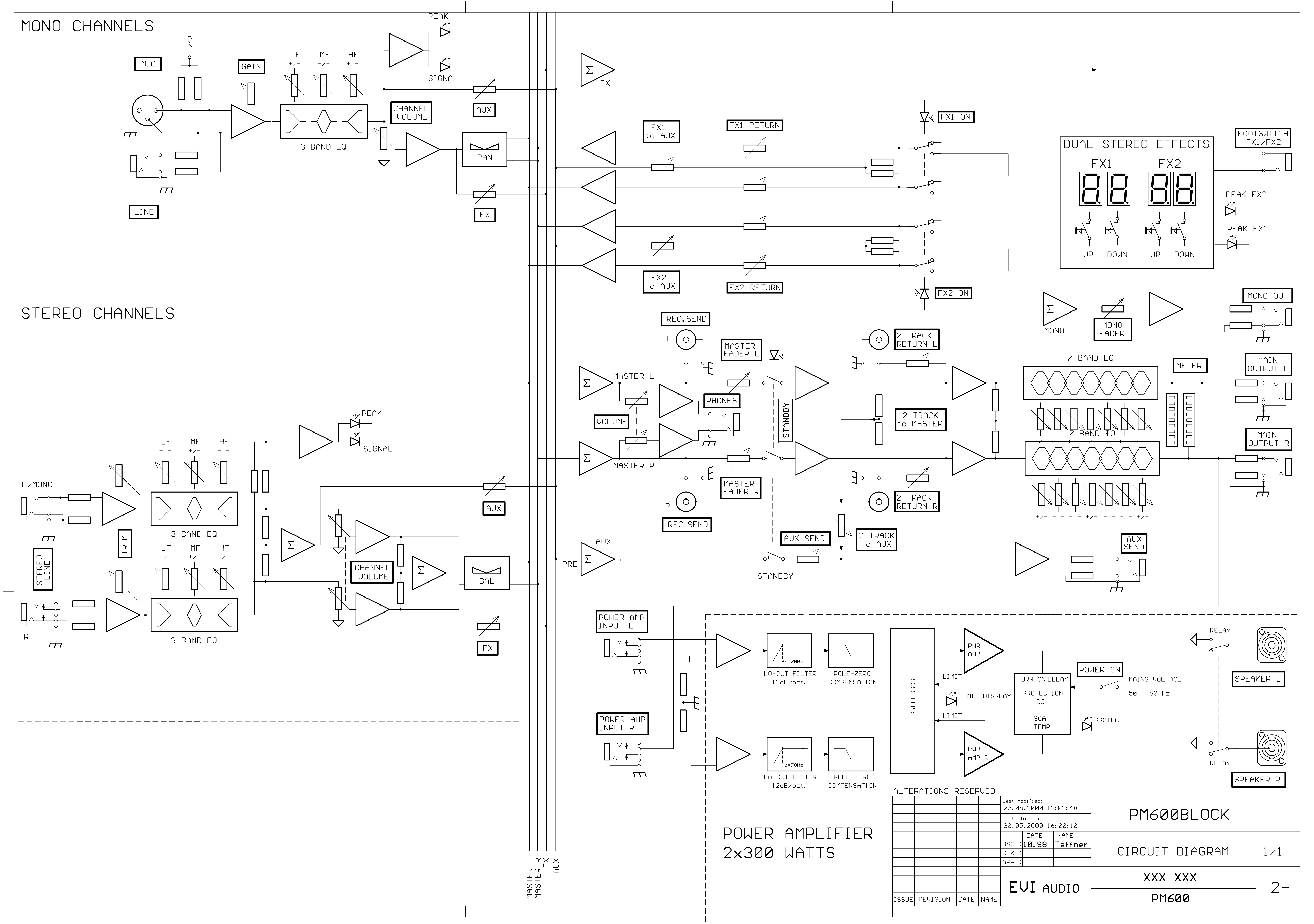
84192d

CIRCUIT DIAGRAM

354 953

PM600 / PSX600

2-


MONO CHANNELS
MIC
+24V
GAIN
LF +/-
MF +/-
HF +/-
3 BAND EQ
PEAK
SIGNAL
CHANNEL VOLUME
AUX
PAN
FX
LINE
STEREO CHANNELS
L/MONO
R
STEREO LINE
TRIM
3 BAND EQ
CHANNEL VOLUME
BAL
MASTER L
MASTER R
FX
AUX
FX1 to AUX
FX1 RETURN
FX2 to AUX
FX2 RETURN
FX1 ON
FX2 ON
DUAL STEREO EFFECTS
FX1
FX2
UP
DOWN
FOOTSWITCH FX1/FX2
PEAK FX2
PEAK FX1
REC.SEND
MASTER FADER L
MASTER FADER R
VOLUME
PHONES
STANDBY
2 TRACK RETURN L
2 TRACK RETURN R
2 TRACK to MASTER
2 TRACK to AUX
AUX SEND
PRE
MONO
MONO FADER
MONO OUT
7 BAND EQ
METER
MAIN OUTPUT L
MAIN OUTPUT R
POWER AMP INPUT L
POWER AMP INPUT R
LO-CUT FILTER 12dB/oct.
fc=70Hz
POLE-ZERO COMPENSATION
PROCESSOR
PWR AMP L
PWR AMP R
LIMIT
LIMIT DISPLAY
TURN ON DELAY
PROTECTION DC HF SOA TEMP
PROTECT
POWER ON
MAINS VOLTAGE 50 - 60 Hz
RELAY
SPEAKER L
SPEAKER R
POWER AMPLIFIER 2x300 WATTS
ALTERATIONS RESERVED!
Last modified: 25.05.2000 11:02:48
Last plotted: 30.05.2000 16:00:10
DATE
NAME
DSG'D 10.98 Taffner
CHK'D
APP'D
ISSUE REVISION DATE NAME
EVI AUDIO
PM600BLOCK
CIRCUIT DIAGRAM
1/1
XXX XXX
PM600
2-

EVI AUDIO

Altec Lansing · DDA · Dynacord · Electro Voice
Gauss · InterActive Technology · Klark Teknik
Merlin · Midas · University Sound · Vega

EVI Audio GmbH
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Service Department
Josef Stadler
23.10.00

Service Instruction

Product: PowerMate 600
Brand: DYNACORD
Title: Alteration of some resistors on the power amp pcb.

On all units with serial number higher than the listed below the alteration was done by the factory.

PM600 230V serial number: 15773
PM600 240V serial number: 10091
PM600 100V serial number: 10151
PM600 120V serial number: 10091

To do this alteration, there are to replace 6 resistors.

1. Disconnect the mains voltage
2. Disassemble the mixing console from the bottom chassis (= power amp & power supply)
3. On the power amp pcb you should replace the following resistors:
   R23, R27, R95 and R96 (820) with 2.4 kOhms
   R28 and R51 (68) with 100 Ohms
4. Re-assemble the unit.

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09.09.99

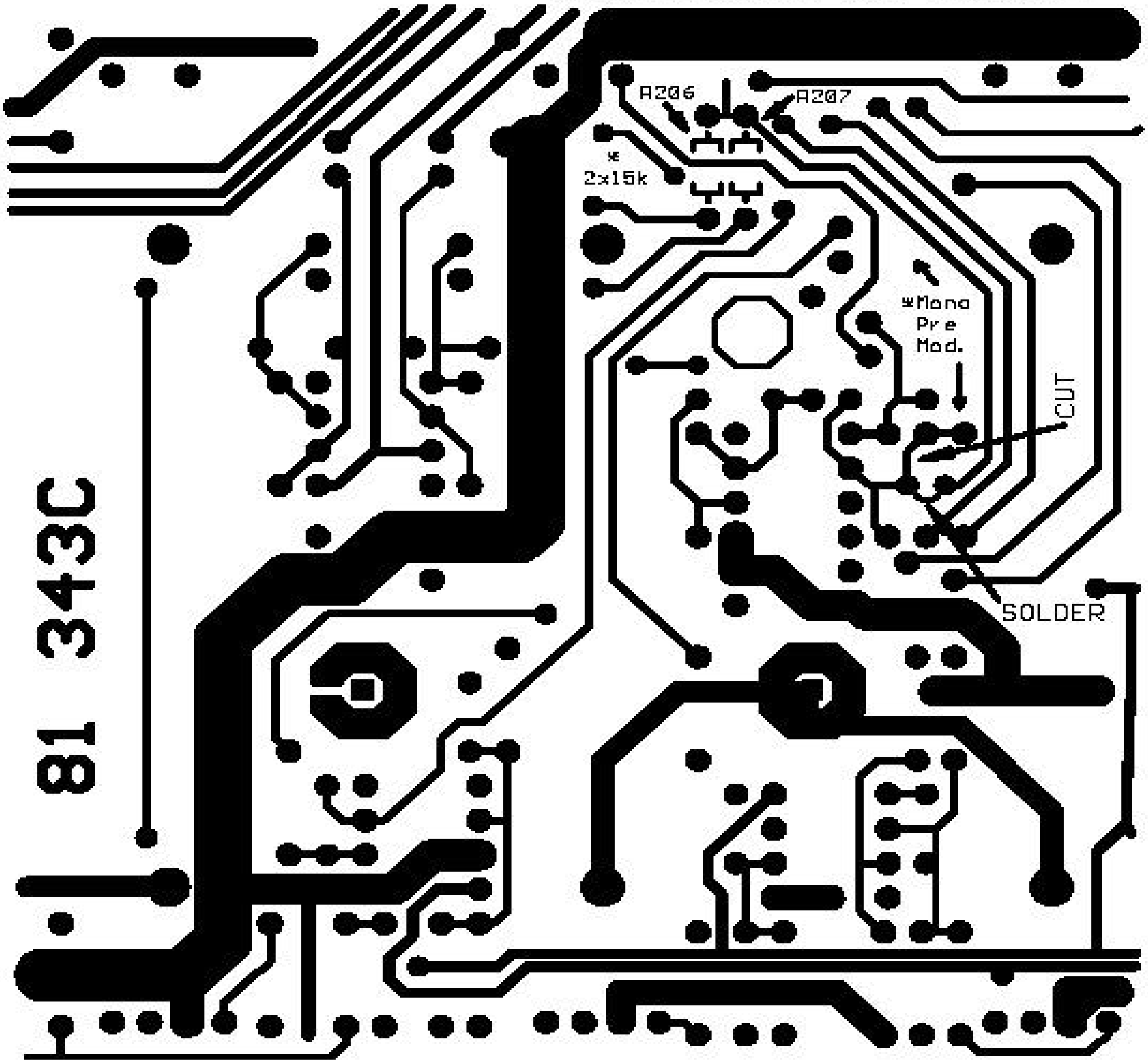
Service Instruction

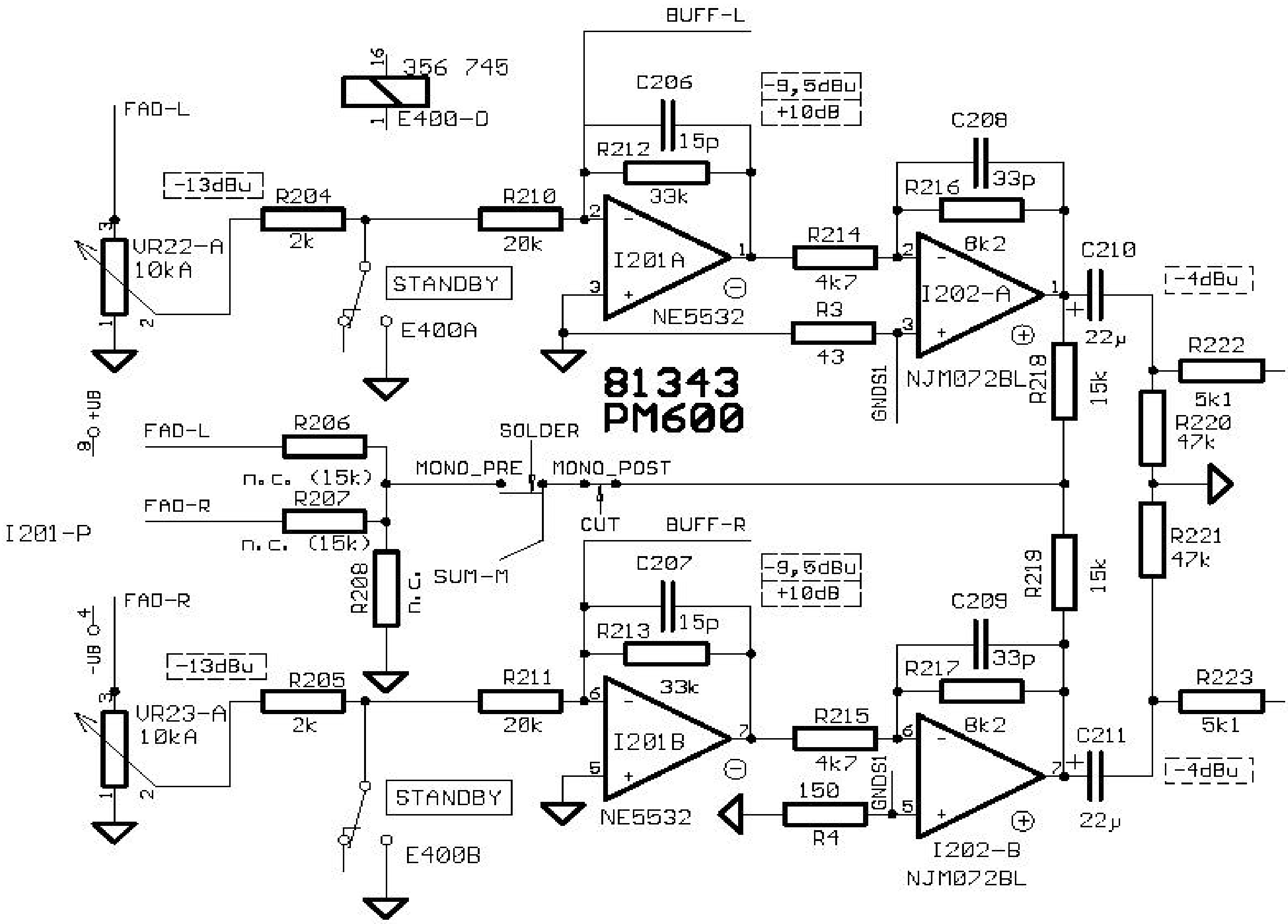
Product: PowerMate 600
Brand: DYNACORD
Title: Alteration of signal routing: Mono-Output-Signal from post-master-fader to pre-master-fader

To do this alteration, there are to fit 2 resistors and there are to cut one track and to reconnect two solder pads.

1. Disconnect the mains voltage
2. Disassemble the mixing console from the bottom chassis (= power amp & power supply)
3. There is no need to remove the pc-boards from the front panel. The alteration can made from the back side of the pc-board.
4. Attached you will find a small spot of the drawing of the tracks on the back side of the master pcb 81343B. There we have marked the position of two resistors: R206 and R207 (values: 15 kohm). You have to fit these two resistors from the back side of the pcb.
5. Now you have to reroute the signal path. Beside the resistors R218/219 we have marked with an arrow a piece of track. These track you have to cut. For the connection marked “SOLDER” you have to solder a short piece of wire between the two solder pads. For cutting use a sharp knife or a small milling cutter.
6. Re-assemble the unit.

R206 = 15 kOhm / R207 = 15 kOhm




BUFF-L
356 745
E400-D
C206
-9,5dBu
+10dB
FAD-L
R212
15p
C208
33p
-13dBu
R204
33k
R216
R210
VR22-A
10kA
2k
20k
I201A
R214
8k2
C210
I202-A
STANDBY
E400A
NE5532
R3
4k7
43
-4dBu
22µ
R222
R218
15k
5k1
81343
PM600
GNDS1
NJM072BL
+UB
R206
SOLDER
R220
47k
FAD-L
MONO_PRE
MONO_POST
n.c. (15k)
FAD-R
R207
CUT
BUFF-R
I201-P
n.c. (15k)
R208
n.c.
SUM-M
C207
-9,5dBu
+10dB
R219
15k
R221
47k
FAD-R
-UB
R213
15p
C209
-13dBu
33k
R217
33p
R205
R211
VR23-A
10kA
2k
20k
I201B
R215
8k2
C211
R223
5k1
4k7
STANDBY
150
GNDS1
-4dBu
NE5532
R4
22µ
E400B
I202-B
NJM072BL

MEMO